

Prevalence of antibiotic resistance in diabetic foot infections and reassessment of empiric antibiotic therapy protocols

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Background:

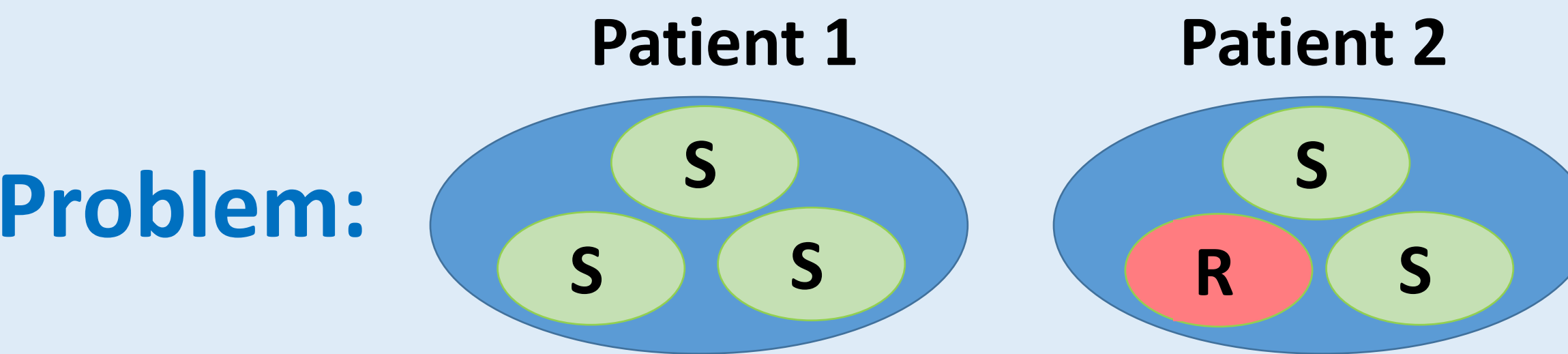
Antibiotic (AB) resistance of causative pathogens in diabetic foot infections (DFI) is well known problem that needs constant monitoring.

Aims:

- To analyze incidence of various pathogens in a hospital cohort of tertiary DF center
- To analyze prevalence of AB-resistance, including resistance to empiric AB protocol of the hospital

Methods:

- All patients with moderate to severe diabetic foot infections admitted in Mar/2025-Feb/2026.
- 142 consecutive wound cultures in 115 admissions (duplicated identical pathogens were excluded)
- Culture obtaining (deep swab or tissue) and bacteriology studies (with antibiotic sensitivity testing in aerobes) were made according to the hospital protocol.
- Empiric AB therapy included CoAmoxi in 74%, CoAmoxi+Ciprofloxacin in 24% (if AB resistance was clinically suspected), others in 12%.



Resistance in: 17% of pathogens, but **50%** of cultures (!)

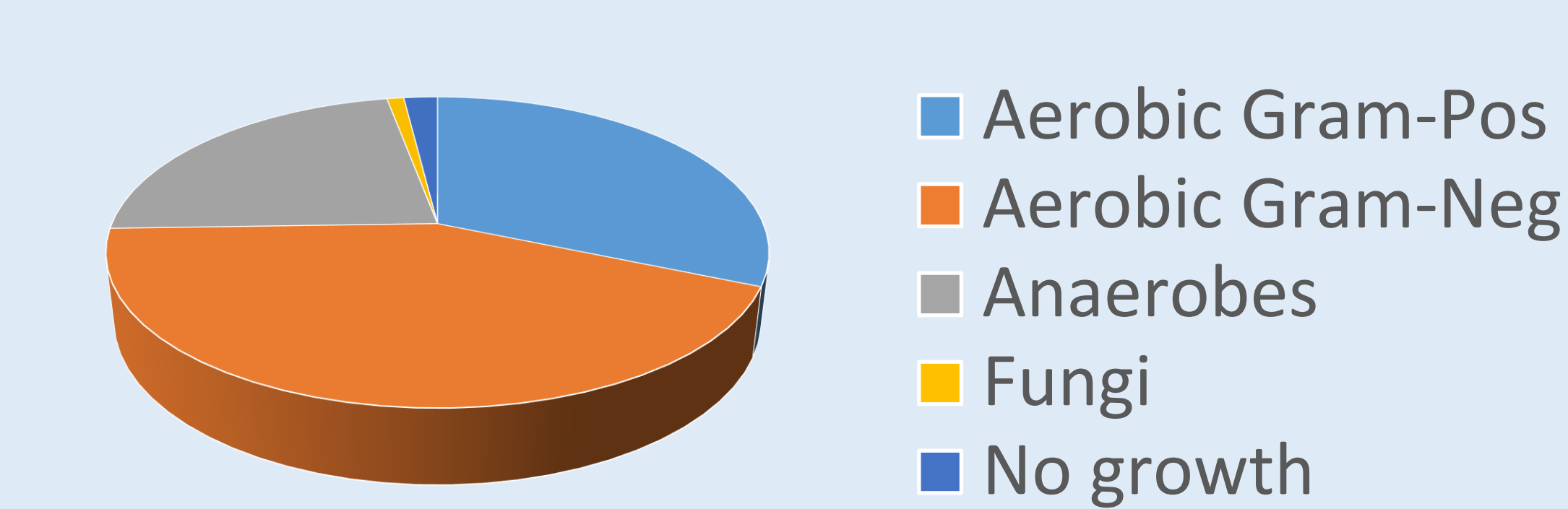
Results:

Bacteria identified:

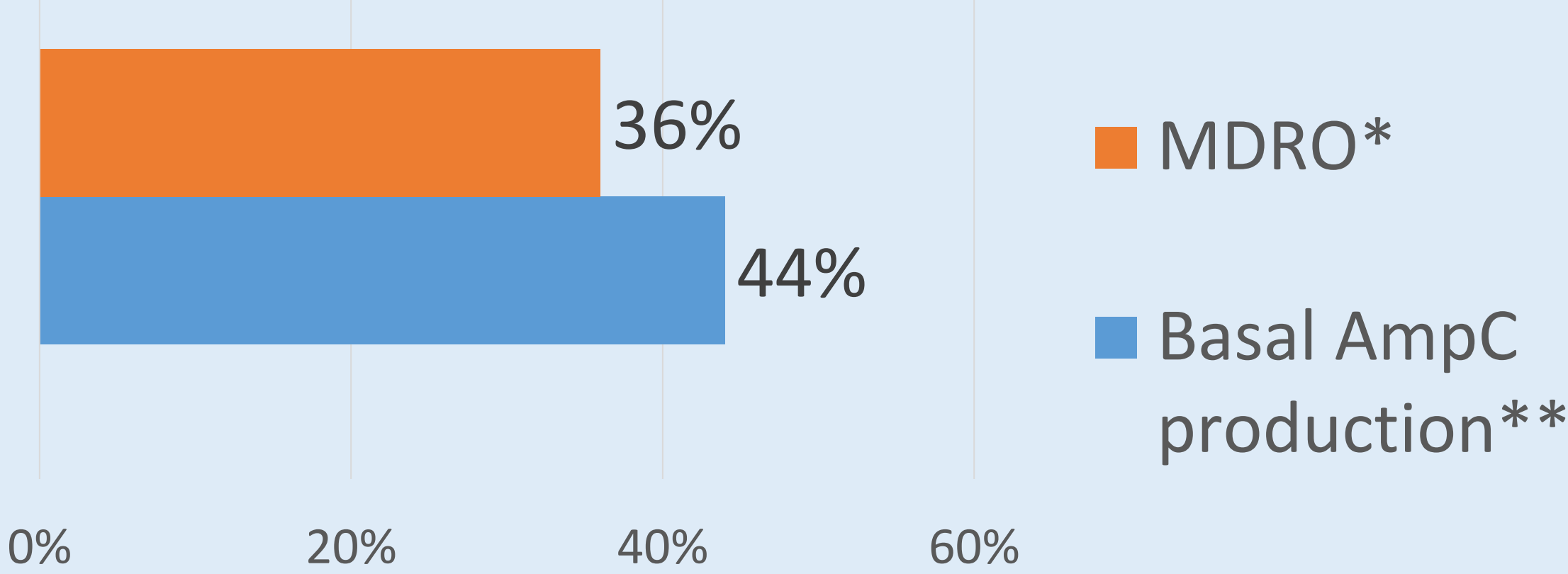
- 367 pathogens
- Median number per culture = 2.6 (0-5)

Pathogens	N	% of cultures
Aerobic Gr +		
St.aureus	31	22%
St.other	5	4%
Strep, including:		
Str.viridans	1	1%
Str.pneumoniae	0	
Str.Beta (A+B)*	38	27%
Enterococcus (Gamma)	44	31%
Aerobic Gr -		
Ps. aeruginosa	28	20%
Ps. other	1	1%
Klebsiella	16	11%
Morganella	23	16%
E.coli	12	8%
Proteus	37	26%
Citrobacter	22	15%
Enterobacter	7	5%
Serratia	6	4%
Stenotrophomonas	2	1%
Acinetobacter	2	1%
Other non-fermenting	1	1%
Other	3	2%
Fungi (Actinomyces, Yeast/Candida)	4	3%
Anaerobes		
	84	59%
NEGATIVE	3	2%

Prevalence (of all pathogens)



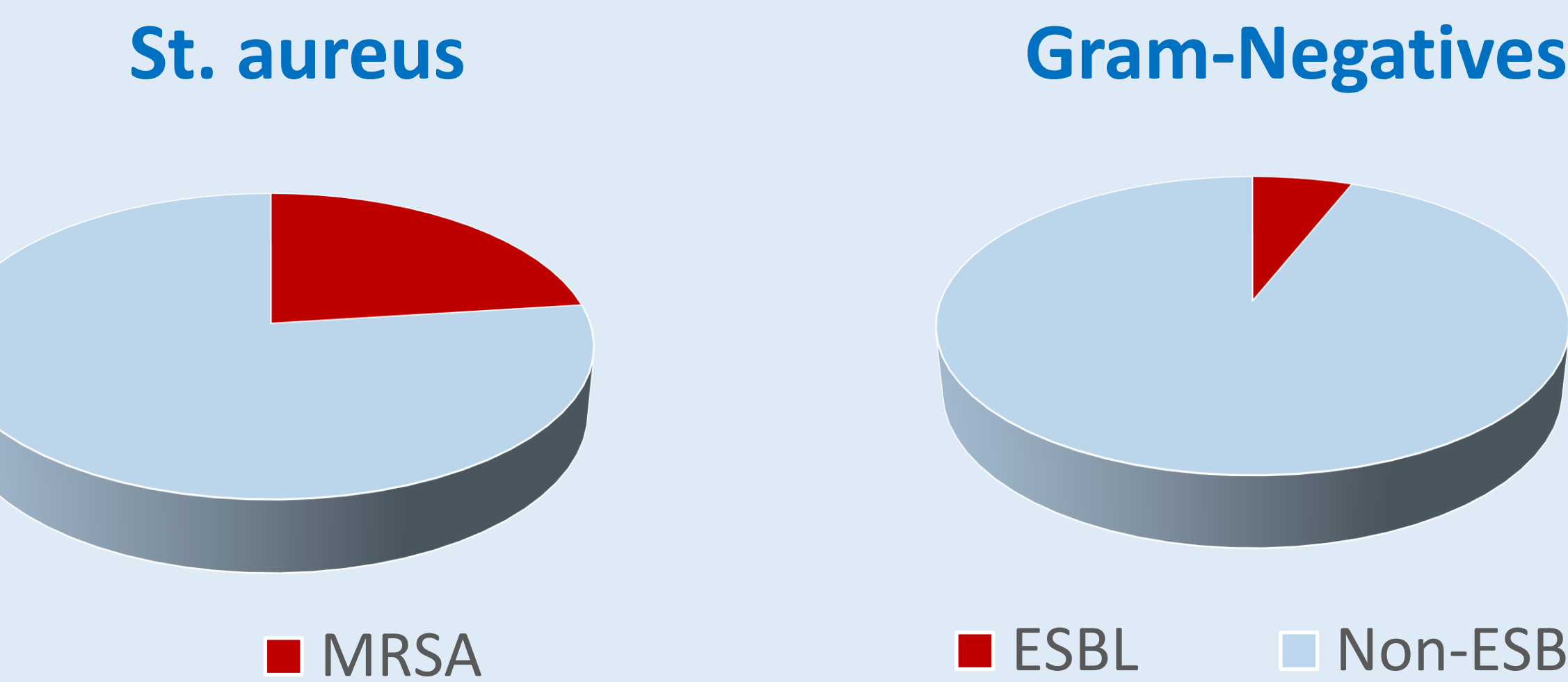
Highly resistant (of all cultures):



* Multi-Drug Resistant Organisms = Resistant to >2 classes of antibiotics

** Pseudomonas, Morganella, Enterobacter etc.

= natural resistance to Co-Amoxi ☹



Predicted efficacy of antibiotics:

- Empiric AB treatment was not (or incompletely) effective and had to be changed in **50%** of patients
- **Table:** Sensitivity to main AB among all aerobic pathogens tested (**NOTE:** the data reflect acquired resistance/sensitivity but not natural resistance/sensitivity (as high sensitivity in Streptococcus, high resistance in Pseudomonas etc.)

Antibiotics	Sens %
Co-Amoxi	44%
Ciprofloxacin	69%
Azithromycin	76%
Cefotaxime	82%
Ceftazidime	90%
Levofloxacin	81%
Pip/Tazo	92%
Meropenem	96%
Trim/Sulfa	77%
Tested only among Gram-Pos, natural resistance in Gram-Neg:	
Clindamycin	81%
Vancomycin	99%
Linezolid	100%
Tested only among Enterobacteriaceae:	
Amikacin	93%

Conclusions:

- 1). Gram-Neg bacteria were predominant in our cohort.
- 2). Prevalence of bacteria with acquired or natural multiple resistance to antibiotics in out cohort was quite high.
- 3). Efficacy of Co-Amoxi appeared to be low, that needs renewal of empiric AB protocol.
- 4). Taking into account growing AB-resistance of anaerobes, implementation of susceptibility testing in this group is reasonable.